

message from EMBO Executive Director

A community effort



"Networking" is becoming a rather overused word these days. Global community building is increasingly widespread and in recent years interactions have

grown with the advent of Web technology and increased international mobility. This is especially true in science, where progress is largely reliant on collaboration and is supported by a number of high-profile projects in Europe. For EMBO's part, networking is an inherent part of the organisation. When EMBO was established in 1964, its founders were probably unaware that they were setting up a very effective network of excellence. Those first EMBO members were not based in neighbouring institutions but in every country throughout Europe. As the network grew, the EMBO membership reinforced its influence on science, sharing a common commitment to the highest scientific standards and a specific vision of how science should be performed.

This still holds true today and every year a new generation of EMBO members joins the community. This select group represents all areas of the life sciences and, with an average age of mid-forty, brings a fresh scientific outlook to the organisation. At this year's Members Workshop in Warsaw (see p. 4), EMBO welcomed 36 of the 2004-elected members to the organisation. The meeting reinforced all that is good about networking within EMBO with leading researchers from diverse areas of the life sciences engaging in intense scientific discussion. With the 2005 membership election, EMBO gains another 40 outstanding scientists (see p. 2).

EMBO membership is more than just a passive honour. I often state that EMBO's biggest asset is its membership and the members make a real and palpable contribution to the organisation. Every year almost half of the approximately 1,200 members are directly engaged in the delivery of our activities – either through EMBO committees, the advisory editorial boards of EMBO's journals, or as inter-

viewers and reviewers of applications for research funding. This is a major commitment by some of the busiest scientists in Europe and one that has always made EMBO unique.

The strength of the EMBO network is reliant on open communication. The voices of EMBO members are heard directly at a committee level and through surveys of the membership. In the most recent survey, over 300 members responded to a questionnaire on EMBO's activities. The results were extremely reassuring with 99% voicing their approval of the organisation and all of the different EMBO activities receiving strong endorsement (see p. 10). The reciprocal benefit of an active network was also underlined in the comments made by many members. This feedback has a direct impact on the organisation and is evidence that networking can be effective. Through surveys and other 'live' interactions with EMBO, the members are steering the future of the organisation.

However, the EMBO network does not stop with the inner circle of members. Increasingly the network of EMBO young investigators offers scientists in the early stages of their independent careers a vigorous environment for discussion and collaboration. A third network has also arisen from the linkage of current and former EMBO long-term fellowship recipients. The fellows' network will become an area of greater focus for EMBO in coming years and offers yet another opportunity for EMBO to interact with a community of excellent scientists. EMBO will also provide a useful point of contact and advice as these young scientists progress throughout their careers.

Taken at face value, networking may sometimes seem over-hyped, but the reality of EMBO's experience shows that good networks are in fact the most effective way of advancing different scientific, political and strategic agendas. The knowledge that an invisible community operates behind EMBO's activities gives the organisation a greater strength and a greater value in the wider scientific community.

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As I have already mentioned, communicating with this network is also an important priority and of course this is one reason why we launched *EMBOencounters*.

Frank Gannon

2005 EMBO members

In October 2005, EMBO announced the election of 40 leading life scientists to its membership. Each member was elected on the basis

of proven excellence in research. Selection as an EMBO member recognises the key work being carried out by the chosen researchers

and identifies them as among the very best in their field.

Dario Alessi (UK)
Cell signalling,
signal transduction

Silvia Arber (CH)
Neurobiology,
developmental biology

Philip Avner (FR)
Epigenetics,
mouse genetics

Stephen D. Bell (UK)
DNA replication,
chromatin, evolution, Archaea

Walter Birchmeier (DE)
Cancer, developmental biology,
signal transduction

Stephen D.M. Brown (UK)
Mouse genetics,
deafness genetics

Jozsef Burgyan (HU)
Plant pathogens,
RNA silencing

Jean-Laurent Casanova (FR)
Genetics of human
infectious diseases

Maria Antonietta de Matteis (IT)
Membrane traffic

Riccardo Fodde (NL)
Signal transduction,
stem cells, cancer

Robert Fuchs (FR)
Genome stability and
dynamics

Kenn Gerdes (DK)
Bacterial cytoskeleton,
chromosome segregation, toxins

Pierre Gönczy (CH)
Cell division, *C. elegans*

Edith Heard (FR)
Epigenetics

Christine Holt (UK)
Developmental
neuroscience

Andreas E. Kulozik (DE)
RNA, molecular biology of
disease

Achim Leutz (DE)
Hematopoiesis, leukemia,
gene regulation

Julian Lewis (UK)
Developmental biology,
Notch signalling

Joachim Lingner (CH)
Telomeres,
genome stability

Michael H. Malim (UK)
HIV, innate resistance

Maria G. Masucci (SE)
Virology, ubiquitin,
proteasome

Harvey T. McMahon (UK)
Membrane curvature,
endocytosis, neuroscience

Christoph W. Müller (FR)
Structural biology,
chromatin & transcription

Ulf Nehrbass (KR)
Nuclear architecture,
gene regulation

Luke O'Neill (IE)
Innate immunity,
cytokines

Linda Partridge (UK)
Aging, evolutionary
genetics

Jerzy Paszkowski (CH)
Epigenetics

Laurence H. Pearl (UK)
Structural biology,
biochemistry, cancer

Felix Rey (FR)
Structural virology,
membrane fusion

Mart Saarma (FI)
Neuroscience

Kari Stefansson (IS)
Genetics of complex traits

Jens Stougaard (DK)
Plant molecular genetics,
symbiosis

Giulio Superti-Furga (AT)
Systems biology,
molecular medicine

Alfonso Valencia (ES)
Bioinformatics, proteins,
systems biology

Hervé Vaucheret (FR)
Epigenetics, plant biology,
RNA silencing

Isabelle Vernos (ES)
Cytoskeleton, cell cycle

Stephen W. Wilson (UK)
Developmental neurobiology,
genetics

ASSOCIATE MEMBERS

Ira Mellman (US)
Membrane traffic, polarity,
immunology

Roger Y. Tsien (US)
Molecular engineering,
imaging, signalling

Bert Vogelstein (US)
Cancer biology, genetics

www.embo.org/about_embo/press/new_members05.html

Deadline for 2006:

15
March

Submission of
ballot papers for
2006 membership
election

A golden career

Dario Alessi wins EMBO Gold Medal

Dario Alessi of Dundee University's Medical Research Council (MRC) Protein Phosphorylation Unit in Scotland is the 2005 winner of the "EMBO Gold". The diabetes researcher receives the award in recognition of his landmark work in cell signalling. His research on kinases and their role in inherited disease has provided exciting new insights into conditions such as diabetes, cancer and hypertension. In particular, his discovery and characterisation of PDK1 and LKB1 hold great promise for the treatment of inherited diseases.

Every year the EMBO Gold Medal honours a scientist aged 40 years or under for outstanding research carried out within Europe. One look at Alessi's achievements over the past ten years and it is not hard to see why he was selected for the honour. His first major breakthrough came in 1997, when he discovered PDK1 and its ability to activate the PKB enzyme through phosphorylation. This finding provided the missing link to one of the major symptoms of Type 2 diabetes. Subsequent research uncovered PDK1 as a master regulator of insulin-controlled kinases and in 2004 Alessi's group also validated PDK1 as a key anti-cancer agent.

Another highlight of Alessi's career is his work on LKB1. In 2003, he identified a key link between LKB1 and AMPK, an enzyme important in regulating glucose levels in the blood. This discovery has opened the door for targeted research into improved cancer and diabetes drugs. Alessi's group has since shown that LKB1 also impacts other enzymes, some of which are linked to Alzheimer's disease. Future studies of the group will continue to focus on LKB1-activated kinases as well as other poorly characterised kinases, whose mutation results in conditions such as Gordon's syndrome and early onset Parkinson's disease.

EMBO is not the only scientific organisation to notice Alessi's achievements. In addition to



The Polish Minister of Science, Michael Kleiber, presents Dario Alessi with the EMBO Gold Medal

the Gold Medal and his recent election to the EMBO membership, he has won a number of other international awards and published over 100 peer-reviewed research papers. Recent data from the Institute for Scientific Information (ISI) ranked Alessi as the world's 13th most cited scientist in the fields of biology and biochemistry from January 1995 to August 2005 – a remarkable achievement for a researcher so early in their career.

For Alessi, the European aspect of the EMBO award has particular significance. Born in France to Scottish-Italian parents, brought up in Belgium and having completed his graduate studies in England, he is something of a European polyglot. "I have a strong European sense of identity and to receive the recognition of such an esteemed group of European scientists is an immense privilege."

»Dario is an exemplary role model for young researchers, having achieved so much in his still young research career. The tremendous impact of his work is all the more remarkable when you consider his publication approach, which steers away from high impact journals. To do this and still achieve such an influence on biomedical research is the mark of a truly exceptional scientist.«

Frank Gannon, EMBO Executive Director

The Polish Minister of Science, *Michael Kleiber*, presented Alessi with his award at a special ceremony held on October 16 at Warsaw Royal Castle as part of the EMBO Members Workshop.

www.embo.org/about_embo/press/alessi_background.html



Deadline for 2006:

30
April

EMBO membership
nominations
of Gold Medal
candidates

Frontiers of Molecular Biology

2005 EMBO Members Workshop

On October 14–18, over 100 EMBO members and other scientists gathered in Warsaw, Poland for the EMBO Members Workshop, "Frontiers of Molecular Biology". The meeting could not have been more aptly named with the scientific talks and discussion crossing diverse areas of the life sciences.

Every year the EMBO Members Workshop introduces the research of the new EMBO members to the community. This year the speakers were the members elected to the organisation in 2004. As always, this was a biologically diverse meeting with fascinating presentations touching all areas of molecular biology. Of particular topical interest were talks on stem cells, immunology and virology, the latter being especially relevant with increasing awareness of avian flu.

All of the talks were pitched for a general scientific audience – a fact that was appreci-

ated by the participants who commended the meeting as a unique opportunity to gain a glimpse of research outside their own areas. The workshop also featured a microbiology mini-symposium, a field that was well represented amongst the 2004 members. The symposium was opened by EMBO member and Nobel laureate, *Werner Arber*, who gave a lecture entitled "Darwin in the Microbial World". "Genes and Behaviour" was the focus of a special Science & Society session and the Gold Medal award ceremony gave participants the opportunity to hear from the 2005 winner, *Dario Alessi* (see p. 3).

It is not often that scientists get the opportunity to look outside their own sphere of reference and grasp what is going on in other research areas. The EMBO Members Workshop presents a chance to do just that and the atmosphere at the 2005 meeting showed that

this can be an extremely worthwhile and motivating experience.

Save the date!

The *2006 EMBO Members Workshop* will take place on October 13–17 in Sheffield, UK. The speakers will be the EMBO members elected in 2005 (see p. 2) and the majority of talks will focus on current developments in the broad spectrum of fields they represent.

Watch the EMBO website for more information and registration.

www.embo.org

Enhanced online information

New EMBO website unveiled

Regular visitors to the EMBO website will have noticed big changes in the past few months. A complete re-design now enables users to easily view all EMBO activities at a glance.

Four main headings on the homepage help visitors find information about EMBO, its focus areas, communities and publications. Users can easily navigate from any page of the website using the links in the side menu. Regularly

updated graphics inform the community of recent announcements and upcoming conferences. Statistics show that the EMBO website is currently accessed by scientists, policy makers, the media and the general public.

The screenshot shows the EMBO website homepage. At the top, the logo and navigation links for Staff contacts, EMBO Members, for researchers, for journalists, and sitemap are visible. The main content area features two news items: "EMBO selects 2005 Young Investigators" and "EMBO elects 2005 EMBO members". Below these is a paragraph describing the organization's mission. A central navigation menu lists four main sections: About EMBO, Focus Areas, Communities, and Publications. The About EMBO section includes links to introduction, activities, EMBO history, EMBO news, and calendar of events. Focus Areas includes courses, workshops, plenary lectures, electronic information, fellowships, science and society, young investigators, world activities, and women in science. Communities includes 'At the bench', fellow network, sectoral groups, co-operation, newsletters, EMBO Life Sciences, and Mobility Portal. Publications includes The EMBO Journal, EMBO Reports, Molecular Systems Biology, and EMBO Documentation. The sidebar on the right contains links to EMBO Reports, The EMBO Journal, Molecular Systems Biology, and EMBO/EMBL joint conference.

Other features on the site include:

- Permanent links to *The EMBO Journal*, *EMBO reports* and *Molecular Systems Biology*
- A special password-protected area for EMBO members providing information and relevant documents
- Easy access to information and online application for EMBO opportunities such as fellowships, the Young Investigator Programme, courses, workshops and conferences

Your feedback on the new website is very welcome. Please send your comments to *Patricia Codyre* (patricia.codyre@embo.org).

www.embo.org

Communicating a fascination for science

Edoardo Boncinelli wins EMBO Award for Communication



Professor Edoardo Boncinelli

In recognition of his lifetime achievement in science communication, Professor **Edoardo Boncinelli** is the 2005 recipient of the EMBO Award for Communication in the Life Sciences. A prize of 5,000 Euro and a handcrafted medal were presented to Professor Boncinelli on October 28, 2005 at the EMBO/EMBL Science & Society Conference in Heidelberg, Germany.

In choosing Boncinelli, the international EMBO jury applauded his ability to recognise and communicate the social implications of scientific advances, enabling a deeper public appreciation and understanding of the story behind science. The secret of Boncinelli's success in bringing science to the public was revealed by the winner himself upon receiving the EMBO award: "For me, the key to effective science communication is to pass on a fascination for science, as the only real adventure left on this planet."

For the past eleven years, Boncinelli has made topics such as genetics, aging, neurobiology and public health accessible to broad audiences through the publication of 18 popular science books. His scientific career meanwhile culminated in his appointment as Professor of Biology and Genetics at the University Vita-Salute San Raffaele in Milan, Italy.

In media circles, Boncinelli has established himself as a trusted contact for TV and radio interviews. He is also a regular contributor to the leading Italian daily newspaper, *Il Corriere della Sera*, on issues such as cloning, stem cells and genetically-modified organisms. A pioneer in the field of developmental biology of higher animals and humans, Boncinelli also reaches out to the community promoting discussion through his involvement in public debates and school visits.

Since 2002, EMBO has rewarded scientists for their efforts to communicate science to the public while remaining fully active in research. As with past winners, Professor Boncinelli will also be nominated for the European Commission's Descartes Prize for Science Communication.

This year, as part of the Award for Communication, EMBO presented an additional prize for the best single initiative in science communication. This special dis-

cretionary award went to Russian scientist, Dr. **Alexander Vershinin**, in recognition of his exceptional work in communicating marine biology to the young through his "Living Black Sea" education initiative and book on marine science, "Life of the Black Sea".

www.embo.org/about_embo/press/communications_award05.html



Application deadline for the 2006 Award:

31
March

EMBO Award for
Communication in
the Life Sciences

Moving discoveries from the lab to the clinic

EMBO Molecular Medicine Series:
Breast Cancer Meeting

On May 3-5, 2006, the third in a series of EMBO molecular medicine meetings will take place in Galway, Ireland. The 2006 meeting will focus on breast cancer and encourage practical dialogue between researchers and clinicians.

EMBO has been organising annual meetings on molecular medicine topics since 2003 with the aim of translating quality research into clinical practice. The 2006 Breast Cancer Meeting will bring together scientists performing work of clinical relevance with clinicians involved in applying new therapeutic treatments. This will be a novel and interactive environment promoting scientific collaboration that could result in long-term benefits for breast cancer treatment.

Further information and registration details are available on the website. The number of places is restricted so please register early.

www.mm-bc.embo.org

MEETING SESSIONS WILL FOCUS ON:

- Prediction, treatment and prognosis
- Targeted therapies for breast cancer
- Scientists' hopes, clinicians' needs

SPEAKERS INCLUDE:

- **Bert O'Malley**
Baylor College of Medicine
- **Matthew J. Ellis**
Washington Univ. Medical School
- **Anne-Lise Borresen Dale**
Norwegian Radium Hospital
- **Alan Ashworth**
Institute of Cancer Research
- **Nancy Hynes**
Friedrich Miescher Institute
- **Pier Giuseppe Pelicci**
European Institute of Oncology
- **Donald McDonnell**
Duke University Medical Center
- **Per Lonning**
Haukeland University Hospital
- **Julio Celis**
Institute of Cancer Biology

EMBO events

2005

Mini-Symposium
Science & Society: Genes and behaviour
(EMBL/EMBO/IBC-CNR Public Mini-symposium)
December 9, Heidelberg, DE

Workshop
Upstream and downstream of Hox Genes
December 14–17, Hyderabad, IN

2006

World Practical Course
Advanced methods in reconstructing molecular phylogenetic relationships
January 30 – February 5, Rio de Janeiro, Brazil

Workshop
Innate danger signals and HMGB1
February 8–11, Milan, IT

Practical Course
Chromatin immunoprecipitation
February 27 – March 4, Heidelberg, DE

Workshop
Transcriptional regulation in health and disease
March 6–8, Paris, FR

Workshop
Homeodomain proteins, hematopoietic development and leukemias
(Joint SEMM/EMBO Workshop)
March 23–25, Riva del Garda, IT

Workshop
Structure, mechanism of formation and cellular effects of amyloid aggregates
(Joint FEBS/EMBO Workshop)
March 25–28, Florence, IT

Workshop
The nucleolus: New perspectives
March 28–29, York, UK

Joint 62nd Harden Conference/
EMBO Workshop
NO: A radical in control. The biological diversity of nitric oxide metabolism and signalling
April 4–8, Cirencester, UK

Practical Course
Comparative genomics and SNP analysis using the Ensembl Genome Browser
April 19–21, Valencia, ES

Workshop
Redox signalling in human disease and ageing
April 20–23, Rome, IT

Conference Series
Oncogenes and growth control
April 26–30, Heidelberg, DE

Workshop
Functional organisation of the cell nucleus
May 5–8, Prague, CZ

Practical Course
Proteins as cellular nanomachines: Molecular motors, channels & pumps
(III International Symposium on Myosin V)
May 8–19, Rio de Janeiro, BR

Practical Course
PROTEINS: Structure, dynamics and energetics
May 10–17, Shanghai, CN

Practical Course
Statistical methods for the identification of genes under natural selection
May 15–19, Helsinki, FI

Conference Series
Recombination mechanisms and the maintenance of genome stability
May 15–19, Seillac, FR

Practical Course
Structural characterization of macromolecular complexes
May 15–20, Grenoble, FR

Workshop
Signals and mechanics in directed cell migration
May 18–20, Heidelberg, DE

Workshop
Evolutionary biology of *Caenorhabditis elegans* and closely related species
May 23–27, Oeiras, PT

Workshop
Principles of self-organisation in living matter
June 2–5, Heidelberg, DE

Workshop
Cell membrane organisation and dynamics
June 3–7, Bilbao, ES

Conference
Common molecular mechanisms of mammary gland development and breast cancer progression
(Joint ESF COST B20/EMBO Conference)
June 6–8, Dublin, IE

Practical Course
Molecular genetics with the fission yeast *Schizosaccharomyces pombe*
June 11–21, Copenhagen, DK

Practical Course
Advanced techniques in molecular medicine
June 13–20, Uppsala, SE

Practical Course
Quantification of gene expression by qPCR
June 17–23, Heidelberg, DE

Practical Course
The application of transient kinetics methods to biological macromolecules
June 18–24, Canterbury, UK

Conference Series
Molecular and developmental biology of *Drosophila*
June 18–24, Kolybari (Crete), GR

Practical Course
Plant cell biology
June 18–24, Wageningen, NL

Practical Course
Electron microscopy and stereology in cell biology
(Joint FEBS/EMBO Practical Course)
June 20–29, Oslo, NO

ESF-EMBO Symposia
Gene transcription in yeast
June 24–29, Barcelona, ES

Practical Course
Microinjection and detection of probes in living cells
June 25 – July 1, Heidelberg, DE

Practical Course
Advanced analysis and informatics of microarray data
June 25 – July 1, Hinxton, UK

Practical Course
Biomolecular simulation
June 28 – July 5, Paris, FR

For full details and links to all 2006 events see:
www.embo.org/courses_workshops

Next deadline for organisers to apply for EMBO funds in 2006:

1
February

EMBO courses, workshops, conferences and conference series

Spotlight on...

The EMBO Fellowship Programme

Staying the course towards excellence

For almost 40 years, the EMBO Fellowship Programme has been the anchor of EMBO's activities. Its continued success in recent years is testament to a thorough scientific evaluation process.

Awarded for a period of up to two years for advanced post-doctoral research and open to scientists worldwide, EMBO's long-term fellowships are currently experiencing unprecedented popularity. The past few years have seen demand double with over 1,200 applications received in 2005 alone. An average of 600 long-term fellowship applications are received on each of the two deadlines, February 15 and August 15. With 90% arriving on the deadline date itself, it's all hands on deck in the EMBO fellowship office to ensure the applications are processed within the allotted three-month period.

Fortunately a very thorough scientific evaluation process is in place to ensure that only the best of the highly qualified applicants become EMBO fellows. The process begins with the assessment of each application according to set eligibility criteria. Eligible applications are then logged into a central database and applicants are asked to ensure confidential references and a letter from the receiving institute are submitted to support their applications.

This is where the EMBO community becomes involved. All eligible applications are pre-screened by five members of the EMBO Fellowship Committee. The group's evaluations are used to determine a pool of candidates who are then interviewed by an EMBO member or young investigator. Great effort is made to match the research interests of interviewers with the applicants to ensure a detailed evaluation. All applications are then passed on to the remaining members of the Fellowship Committee, who use the interview reports to assist them in their scoring of each application.

Final decisions on fellowship awards are made at the bi-annual committee meetings. Successful candidates are informed immediately and the announcement is published on the EMBO website the same day. Streamlined payment procedures allow the new fellows to start their fellowships very soon after selection. However, this does not mean that the evaluation process is over. Following the first

year of funding, each fellow's supervisor is required to submit a letter to EMBO confirming their satisfaction with the applicant. The second year of funding is dependent on this recommendation. On completion of their fellowship, all fellows are also asked to submit a final report, highlighting any resulting publications.

To ensure that no one is left adrift following their fellowship experience, EMBO provides follow-up activities. The annual Fellows Meeting in Heidelberg provides participants with the opportunity to interact with each other and present their research. For fellows living in Canada and the USA, similar meetings are held closer to home. The next one is planned for November 2006 in San Diego, California. The Fellows Network also provides an opportunity for fellows worldwide to stay in touch and keep up to date with upcoming meetings and opportunities.

»The continued support that EMBO members and young investigators have shown for the programme is very much appreciated. Without their prompt input as interviewers, evaluators and committee members, we would not be able to ensure the high quality and efficient evaluation of such a large number of applications in a short period of time.«

Jan Taplick, Manager, EMBO Fellowship Programme

The processing of short-term fellowship applications takes a different tack. The duration of these grants ranges from two weeks to three months and the recent integration of EMBO's former World Programme fellowships into the scheme means that applications now come in from around the world. The application procedure is similar to the long-term fellowships, although fewer applications are received – just under 400 in 2005. As with the long-term fellowship evaluation process, there is no leeway in the strict scientific appraisal that each application undergoes.

There are no fixed deadlines for the short-term fellowships, so applications are processed by the EMBO fellowship office as



photo by Udo Ringelsen, EMBO-Photolab

*From left to right: Liselott Maidment
Long-term Fellowships Administrator
Agnès Visser-de Matteis
Short-term Fellowships Administrator
Jan Taplick, Programme Manager*

they are received. Applications are sent to two evaluators, either EMBO members or young investigators, who provide comments on the applicant's research project and the receiving institute. Based on these recommendations, Jan Taplick, manager of the Fellowship Programme, decides whether funding should be awarded. The emphasis during this process is on the scientific benefit to be gained by both the receiving institute and the home laboratory.

Jan Taplick praises the involvement of the EMBO community in the fellowship evaluation process: "The continued support that EMBO members and young investigators have shown for the programme is very much appreciated. Without their prompt input as interviewers, evaluators and committee members, we would not be able to ensure the high quality and efficient evaluation of such a large number of applications in a short period of time."

www.embo.org/fellowships
www.embo.org/communities/fellowsnet.html

Next deadline for applications in 2006:

15
February
EMBO
Long-Term
Fellowships

Editor picks – EMBO publications

In each issue of *EMBO encounters*, the editors of *The EMBO Journal*, *EMBO reports* and *Molecular Systems Biology* highlight particularly interesting papers.



The protein translocation channel binds proteasomes to the endoplasmic reticulum membrane

Kai-Uwe Kalies, Susanne Allan, Tatiana Sergeyenko, Heike Kröger, Karin Römisch
The EMBO Journal 24: 2284–2293
(06 Jul 2005)

The MAP kinase substrate MKS1 is a regulator of plant defense responses

Erik Andreasson, Thomas Jenkins, Peter Brodersen, Stephan Thorgrimsen, Nikolaj HT Petersen, Shijiang Zhu, Jin-Long Qiu, Pernille Micheelsen, Anne Rocher, Morten Petersen, Mari-Anne Newman, Henrik Bjørn Nielsen, Heribert Hirt, Imre Somssich, Ole Mattsson, John Mundy
The EMBO Journal 24: 2579–2589
(20 Jul 2005)

Ubiquitylation and cell signaling

Kaisa Haglund, Ivan Dikic
The EMBO Journal 24: 3353–3359
(05 Oct 2005)

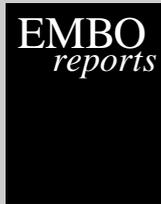
Jagged1 signals in the postnatal subventricular zone are required for neural stem cell self-renewal

Yves Nyfeler, Robert D Kirch, Ned Mantei, Dino P Leone, Freddy Radtke, Ueli Suter, Verdon Taylor
The EMBO Journal 24: 3504–3515
(05 Oct 2005)

Transcriptional repressor DREAM regulates T-lymphocyte proliferation and cytokine gene expression

Magali Savignac, Belen Pintado, Alfonso Gutierrez-Adan, Malgorzata Palczewska, Britt Mellström, Jose R Naranjo
The EMBO Journal 24: 3555–3564
(19 Oct 2005)

www.embojournal.org



science & society

The false dichotomy between determinism and 'free will'

Stephen Rose
EMBO reports 6: 1001–1005
(01 Nov 2005)

review

The chromosome cycle: coordinating replication and segregation

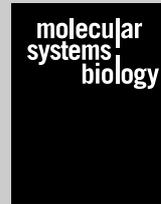
J Julian Blow, Tomoyuki U Tanaka
EMBO reports 6: 1028–1034
(01 Nov 2005)

scientific report

TRBP, a regulator of cellular PKR and HIV-1 virus expression, interacts with Dicer and functions in RNA silencing

Astrid D Haase, Lukasz Jaskiewicz, Haidi Zhang, Sébastien Lainé, Ragna Sack, Anne Gatignol, Witold Filipowicz
EMBO reports 6: 961–967
(01 Oct 2005)

www.emboreports.org



Refactoring bacteriophage T7

Leon Y Chan, Sriram Kosuri, Drew Endy
Molecular Systems Biology
doi:10.1038/msb4100025
(13 Sep 2005)

The promoters of human cell cycle genes integrate signals from two tumor suppressive pathways during cellular transformation

Yuval Tabach, Michael Milyavsky, Igor Shats, Ran Brosh, Or Zuk, Assif Yitzhaky, Roberto Mantovani, Eytan Domany, Varda Rotter, Yitzhak Pilpel
Molecular Systems Biology
doi:10.1038/msb4100030
(18 Oct 2005)

A theoretical framework for specificity in cell signaling

Natalia L Komarova, Xiufen Zou, Qing Nie, Lee Bardwell
Molecular Systems Biology
doi:10.1038/msb4100031
(18 Oct 2005)

www.molecularsystemsbiology.com

!
N.B.

EMBO members have free online access to *The EMBO Journal* and *EMBO reports*. **EMBO young investigators** are also entitled to free access in the first year of their membership of the Young Investigator Programme.

To read the journals online, members and young investigators should use the following password-protected links:

www.embo.org/publications/journal.html

www.embo.org/publications/reports.html

As an open-access publication, *Molecular Systems Biology* is accessible to all.

2005 EMBO young investigators

A group of 17 European life scientists have been selected to receive the support of the EMBO Young Investigator Programme. The pro-

gramme identifies some of the brightest young researchers in Europe, providing academic, practical and financial support in the early

years of their independent careers. Selection as an EMBO young investigator is a mark of the highest scientific excellence.

Yohanns Bellaïche (FR)

Cell polarization in
Drosophila
Institute Curie, Paris

Miguel Del Pozo (ES)

Integrin signalling in
cell migration and
growth
CNIC, Madrid

Claudia Köhler (CH)

Reproductive development
in plants
University of Zürich

Daniel Peeper (NL)

Cellular protection against
oncogenic transformation
NKI, Amsterdam

Michael Boutros (DE)

Genetics of signalling
pathways
DKFZ, Heidelberg

Raimund Dutzler (CH)

Transmembrane
ion transport
University of Zürich

Gernot Längst (DE)

Chromatin dynamics
Adolf Butenandt Institute,
Munich

Yitzhak Pilpel (IL)

Gene expression regulation
Weizmann Institute of
Science, Rehovot

Jason Chin (UK)

Orthogonal translation
MRC-LMB, Cambridge

Oliver Einsle (DE)

Protein systems in
nitrogen and iron
metabolism
Georg-August-University,
Göttingen

Jan Lohmann (DE)

Stem cell fate in plants
MPI, Tübingen

Terence Strick (FR)

Single-molecule analysis of
protein-DNA interactions
Institute Monod, Paris

Fabrizio Chiti (IT)

Protein structure in
amyloid disease
University of Florence

Giles Oldroyd (UK)

Signalling in symbiosis
John Innes Centre, Norwich

Henrik Kaessmann (CH)

Evolution of
the human genome
University of Lausanne

Ruth Palmer (SE)

Receptor tyrosine kinase
signalling pathways
Umea University

Tim Clausen (AT)

Protein quality control
IMP, Vienna

Deadline for applications in 2006:

1

April

**EMBO
Young Investigator
Programme**

www.embo.org/about_embo/press/new_yips05.html

Strengthening the young investigator network

EMBO Young Investigator PhD course

September 4–11 saw PhD students from EMBO young investigator labs in Europe gather in Heidelberg for the fourth annual Young Investigator PhD Course. Entitled “Spotlights on Current Biology”, over 30 students gained new insights into the latest biological research and had the invaluable opportunity to interact with other young researchers from across Europe.

The course is intended to be mutually beneficial to both students and the young investigators, who make up the majority of the speakers. The aim is to provide participants with a broad overview of different areas in the biological sciences and each year planning of the programme involves EMBO young investigators. This gives the group leaders the chance to expose their students to a first-class, international scientific environment. Students return to their labs inspired by the diverse research experience of both speakers and participants as well as having expanded their own network of contacts.

Students are expected to come well prepared to present a paper, poster and short talk on their research. Tutorials, lectures and science writing exercises encourage active participation and include ample time for questions and discussion. The positive feedback from the participants reflects the involvement and commitment of the young investigators who, having been involved from planning to delivery, regard this course as a unique opportunity to support their students.

Gerlind Wallon, manager of the EMBO Young Investigator Programme, extols the benefits of both the practical and networking aspects of the course: “While the primary aim of these courses is to give the students a good overview of the latest developments in biology, they also serve to network the young investigator community via the members of their labs.”

The next EMBO Young Investigator PhD Course is planned for September 17–24, 2006. www.embo.org/yip



photo by Marietta Schupp, EMBL-PhotoLab

Participants of the 2005 EMBO Young Investigator PhD Course

EMBO members have their say

Results of the EMBO membership survey

In September 2005, EMBO members had the opportunity to evaluate the organisation in an online survey. The response rate was impressive with 376 members, just under a third of the entire membership, providing their feedback. Most members also took the time to enter detailed comments and suggestions.

All in all EMBO received a strong endorsement with 53% and 46% of respondents respectively stating that they are very satisfied or satisfied with the organisation. Many members complimented EMBO on its continued influence on the life sciences in Europe and its role in raising standards. Data collected on the organisation's scope and level of involvement in various focus areas also gave a strong indication that EMBO's sphere of activity is in line with members' expectations.

The survey results also showed that the individual EMBO activities are well appreciated by the membership. Some data revealed a lack of awareness of the newer initiatives and EMBO will address this in the coming year through targeted communications. Of course, some members also made criticisms and

offered constructive suggestions for improvement. This feedback is extremely valuable to EMBO and is currently being analysed by the EMBO management. All data and comments will also be discussed with the members serving on the EMBO committees at the relevant meetings in the coming year.

The 2005 members survey was an extremely worthwhile exercise for EMBO and will be repeated at regular intervals in future years. EMBO young investigators and fellows will also have the opportunity to channel their input into the organisation in similar surveys in 2006. EMBO also welcomes ad-hoc feedback from the EMBO community, which can either be directed to the relevant contact person at EMBO or to communications@embo.org.

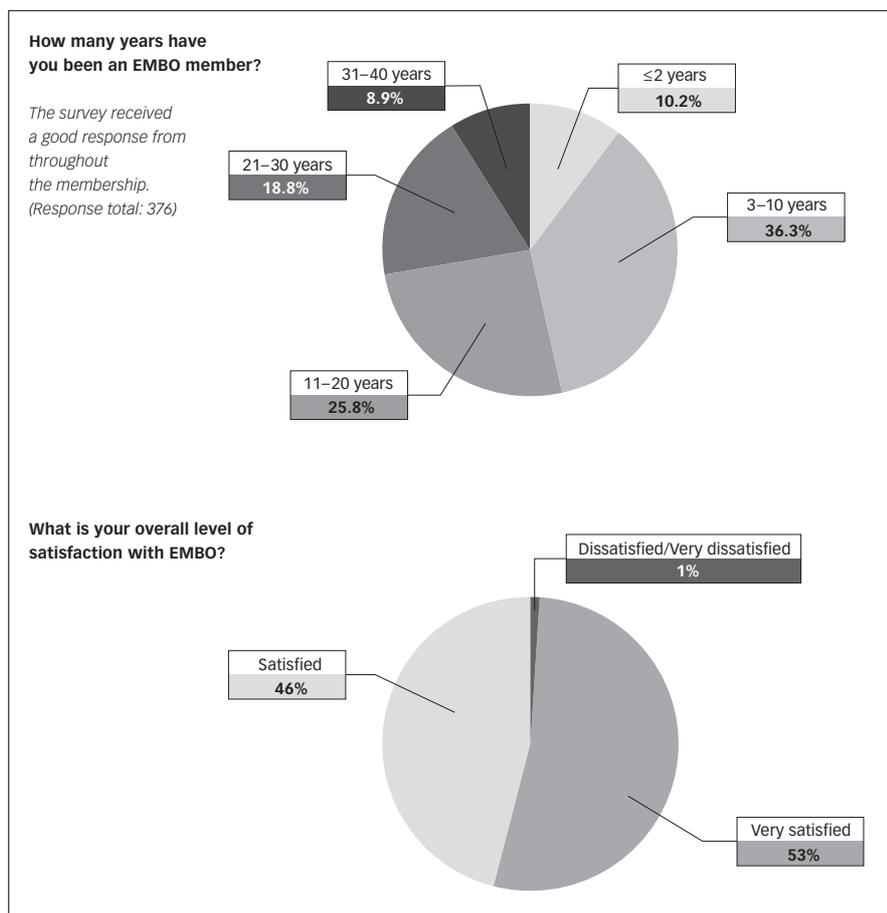
Results of the survey are available online at:

www.embo.org/about_embo/Survey_MB_2005_Results.html

Did you know...?

Some of the comments collected from the members survey revealed a need for clarification in the following areas:

- All EMBO members have free online access to *The EMBO Journal* and *EMBO reports*. See www.embo.org/publications/journal.html and www.embo.org/publications/reports.html
- Nature Publishing Group (NPG) publishes *The EMBO Journal*, *EMBO reports* and *Molecular Systems Biology* on behalf of EMBO. However, EMBO retains complete editorial control over the content.
- During the election process for the 2004 and 2005 EMBO members, EMBO carried out an analysis to determine whether national bias has any impact on voting. The results of the comparison showed that there was a minimal impact on the final results (a difference of only 5% was noted).
- The results of membership elections repeatedly indicate that new EMBO members are selected on the basis of quality and not nationality. For example, while 0.9% of the EMBO membership is based in Greece, 5% of the members elected in 2004 come from this country. Again in 2005, 5% of the elected members are based in Denmark, a country that hosts 1.4% of the entire membership. In other words, scientists in countries with relatively few EMBO members can be elected.
- In the survey results, members who review EMBO funding applications, interview candidates, or review journal submissions asked to be informed of the outcome of these applications or reviews. EMBO is currently considering the best way to implement this across the organisation.



International symposium remembers EMBO member

A tribute to José Campos-Ortega

On May 12–14, 2005, a group of developmental biologists got together in Seville, Spain to honour the memory of **José A. Campos-Ortega**, who passed away in May 2004. One of the pioneers of modern developmental neurobiology, he was remembered at the symposium for his landmark contribution to the understanding of early neurogenesis.

The meeting took place at the Centro Andaluz de Biología del Desarrollo (CABD), also marking the inauguration of the CABD. Operated by Pablo de Olavide University and the Spanish Research Council (CSIC), the new developmental biology centre is the culmination of an ambitious project driven by *Campos-Ortega*, *Manuel Perucho* and EMBO members, *Miguel Beato*, *Enrique Cerdá-Olmedo* and *José López-Barneo*.

Setting up the institute was a long and often frustrating venture for the five scientists.

The building was close to completion in 1996 when it was abandoned after an agreement between Andalusian authorities and the Spanish government collapsed. It was therefore all the more appropriate that the inauguration of the centre should coincide with the symposium in Campos-Ortega's honour. In parallel with the meeting, Miguel Beato and Manuel Perucho were also received as Doctors Honoris Causa by Pablo de Olavide University in recognition of their scientific merits and contribution to the foundation of the CABD.

Born and educated in Valencia, José Campos-Ortega held doctorate degrees from the Universities of Valencia and Göttingen and spent most of his life in Germany. He served in Tübingen, Freiburg and Cologne, where he later led the Institute for Developmental Biology. Campos-Ortega was renowned for his

genetic analysis of the early development of the nervous system and key contributions to other aspects of anatomy, embryology and genetics. He authored "The Embryonic Development of *Drosophila melanogaster*" with *Volker Hartenstein* and has written over 150 primary monographs and reviews.

Campos-Ortega was also an active member of EMBO. Elected in 1977, he contributed to the organisation in many ways including a three-year term on the EMBO Fellowship Committee.

Enrique Cerdá-Olmedo

Centro Andaluz de Biología del Desarrollo
www.upo.es/CABD

Speaker's corner – have your say on hot topics in science

DNA barcoding: Identifying species using a standard piece of DNA

By Cecilia Saccone



DNA barcoding is a tool that uses a short DNA sequence to provide a unique identifier, the DNA barcode, for different living species.

This new approach has the potential to radically advance biologists' efforts to catalogue life on earth – making it possible to identify any organism from a tiny piece of tissue.

Like many new techniques, DNA barcoding is not without controversy. For example, ideal barcodes for animals, plants and other organisms are yet to be identified. This is a challenge, as DNA barcodes have to be different enough between species to allow discrimination while still showing sufficient similarity within members of the same species. Currently the cytochrome c oxidase I (COI) gene is the most popular DNA barcode for animals, but it is now known that this gene is unable to play the same role in all organisms. This raises some important questions:

- Are there other DNA barcode candidates?
- Is there one ideal, universal barcode or should scientists look for multiple candidates?
- What other information can we use to further explore the molecular basis of biodiversity?

Answering these questions is crucial if we are to understand unknown species before they become extinct. Given that we have made little progress in the 150 years since Darwin first bemoaned our ignorance of biological diversity in *The Origin of Species*, DNA barcoding offers an encouragingly rapid option. So far barcoding efforts have been mostly concentrated in taxonomist communities, particularly in North America. It seems timely to involve more European institutions in this issue, including those interested in basic molecular biology.

For more information on DNA barcoding, go to: www.barcodinglife.org

**Do you have a comment on this month's Speaker's Corner?
Make your views known by writing to communications@embo.org.**

What it means to be human

Commission expert group proposes ambitious human mind project

For thousand of years, mankind has been striving to understand the human condition. This is likely to remain an eternal quest. However, despite the seemingly insurmountable nature of the task, modern research has brought some significant answers. A recent report by a European Commission expert group, entitled "What it means to be human", examines these advances and speculates how much more could be achieved through greater cross-discipline and cross-national research into the human mind.

EMBO member, *Jacopo Meldolesi*, was part of the high-level expert group set up by the European Commission's PATHFINDER initiative. The group's conclusions make for interesting reading – outlining recent developments and potential collaborative opportunities in genet-

ics, neurobiology, cognitive science, behavioural science, paleoanthropology, history, modelling and philosophy. The report argues for a large-scale European research endeavour, a so-called "Human Mind Project", which would pull together the vast range of research in this area and support collaboration over multiple fields ranging from the molecular and behavioural sciences to the humanities.

The expert group is aware that this is an ambitious proposal and also evaluates the practical challenges in their report. However, their recommendation for a European Human Mind Project is unequivocal and based on a belief that mankind will never understand what it means to be human without examining the intertwining threads of the story. The report states, "Who we are and how we think

and behave is intimately bound up with our evolutionary history and our present physical, social and cultural environment. Only by weaving these together will we start to get a clear view of the rich fabric of our existence."

The "What it means to be human" PATHFINDER initiative has already supported two calls for proposals. A subsequent call for follow-up "Coordination and Support Actions" has also been issued with the aim of furthering research in this area.

Deadline: **February 15, 2006**

For more information and to download the report go to:

www.cordis.lu/nest

Stem cells and regenerative medicine

EuroStemCell Summer School

EuroStemCell is a consortium of researchers from some of the leading laboratories in Europe. Co-ordinated by EMBO member, *Austin Smith*, the EU-funded project pools diverse skills and technology with the aim of bringing stem cell research from the lab to the clinic. Other EMBO members involved in the initiative include *Margaret Buckingham*, *Giulio Cosso*, *Ana Cumano*, *Jonas Frisén* and *Fiona Watt*. One key focus of EuroStemCell is a training programme and the first summer school was held on September 16–22 in Hydra, Greece.

The topic of the meeting was "Stem Cells and Regenerative Medicine". Over 50 students from Europe, Japan, South Korea, Singapore, Canada and the US took the opportunity to interact with some of the world's top stem cell scientists. Keynote speaker, *Shinichi Nishikawa* of the Riken Center for Developmental Biology in Japan, introduced the summer school as a forum for scientific exchange and discussion of the social context of science. Nishikawa outlined the necessity for stem cell research stressing its significance for developmental

biology and the treatment of disease as well as gene and drug discovery. He followed his introduction with a stimulating lecture on steering germ layer formation of ES cells *in vitro*.

Similar lectures and in-depth workshops gave students a comprehensive grounding in many different aspects of stem cell biology – from embryonic stem cell culture and extrinsic control of stem cell fate to epigenetics, stem cell engineering and clinical translation. Extended workshops also covered technologies such as imaging, microscopy and microarray data analysis. Interactive sessions on ethics, religion, public engagement, commercialisation and patentability provoked lively discussion while grounding the science in the social, political and economic contexts central to stem cell debates.

A public meeting for local residents opened up the debate further with Austin Smith providing an introduction to embryonic stem cells and why it is important to study them. Other speakers spoke about stem cell therapies such as skin grafting and the urgent need for stem cells to overcome donor shortages in diseases like diabetes.

www.eurostemcell.org



© EuroStemCell

EMBO member, *Austin Smith*, works with students at the EuroStemCell Summer School

A meeting of minds

European Brain Research Institute founded in Rome



European Brain Research Institute (EBRI) in Rome, Italy

April 20, 2005 saw the inauguration of the European Brain Research Institute (EBRI) in Rome, Italy. The new institute was brought into being by EMBO members, *Rita Levi-Montalcini* and *Pietro Calissano*, alongside *Luigi Amadio*, EBRI Chief Executive Officer, who provided initial financial and infrastructure support. The EBRI will take a systems biology approach to brain research bringing together leading neurobiologists and neurophysiologists from all over Europe. The institute's scientific director is Massachusetts Institute of Technology (MIT) neuroscientist, *Emilio Bizzi*.

The aim of the EBRI is to reach a greater understanding of higher cognitive functions on

the basis of discoveries in different scientific fields. This cross-fertilisation approach will enable a comprehensive and systematic investigation of the areas involved in the formation of short-term and long-term memories, with an initial focus on learning and memory paradigms in the

motor cortical system. Among the most significant assets of the new research centre is the large primate facility.

The chief research objectives of the EBRI will be the investigation of the functional organisation of the brain and the translation of basic brain science into therapeutic treatments for diseases of the nervous system. In particular, research will focus on the molecular and cellular mechanisms of neurotrophic factor signalling and processing linked to synaptic plasticity and the onset of neurodegenerative disorders. The institute will also contribute to advanced post-graduate training – developing targeted training programmes, PhD tracks,

international summer schools and exchange teaching programmes with European universities.

Alongside *Rita Levi-Montalcini* and *Pietro Calissano* as President and Vice-President of the EBRI, the new centre also pools the expertise of other EMBO members. *Antonino Cattaneo* is the scientific institute's Associate Director and EBRI Board members include *Martin Raff* and *Adriano Aguzzi*. *Martin Raff* also serves on the institute's International Scientific Council together with a number of other prominent researchers including EMBO members, *François Jacob* and *Erwin Neher*.

www.ebri.it

EBRI President and Vice-President, *Rita Levi-Montalcini* and *Pietro Calissano*



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PhDs da Vinci style

Harvard launches PhD in engineering and physical biology

For the past 50 to 100 years, molecular and cellular biology has been viewed primarily as the sum of individual events and their interactions. A new collaboration at Harvard University's Faculty of Arts and Sciences takes a very different angle. The "daVinci Group", which was born of scientific interactions between EMBO associate member, *Nancy Kleckner*, and her Harvard colleague, *John Hutchinson*, examines biological processes through the lens of physics and engineering. An important initial outcome of the collaboration has been the development of a new PhD track in Engineering and Physical Biology (EPB), co-directed by *Kleckner* and *Hutchinson*.

EPB will be a small and highly selective programme. The goal is to create a generation of young scientists who view biological phenom-

ena from the daVinci Group perspective and who can work comfortably in both the life sciences and the physical sciences. Eligible students can have their primary undergraduate training in either area. The programme will follow strict criteria of scientific excellence but will also be flexible and place a priority on independence and imagination. Extensive interaction between individual students and the faculty will also be encouraged.

The activities of the new PhD programme will take place within the intellectual community of the daVinci Group and under the umbrella of Harvard's Department of Molecular and Cellular Biology, Department of Physics, and Division of Engineering and Applied Sciences. The first class of EPB students is due to matriculate in autumn 2006.

This group will have a special role in shaping the future of the new programme.

Application deadline: **December 8, 2005**

Programme details and application procedures:

www.physicalbiology.fas.harvard.edu



Photo by Stu Rosner | www.sturosner.com

Awards of excellence

■ EMBO members

**Doctor Honoris Causa,
University of Regensburg, DE**
Randy Schekman and Ramón Serrano

EMBO Gold Medal 2005
Dario Alessi in recognition of his contribution to cell signalling research and in particular for his landmark work on the role of protein kinases in inherited disease

**Foreign Associate of
National Academy of Sciences, USA**
David Baulcombe in recognition of his distinguished and continuing achievements in original research

Françqui Prize 2005, BE
Dirk Inzé for his contribution to biological and medical sciences

**Lasker Award for
Clinical Medical Research 2005, USA**
Alec Jeffreys and Edwin Southern for their development of Southern hybridization and DNA fingerprinting, which together revolutionised human genetics and forensic diagnostics

**Leukemia & Lymphoma Society de Villiers
International Achievement Award 2005**
Frederick W. Alt for his outstanding research contribution to the treatment and prevention of blood cancers

Massry Prize 2005
David Baulcombe (with Andrew Fire and Craig Mello) for their discoveries related to RNAi

**Member of Royal Academy of Sciences
and Arts of Barcelona, ES**
Juan A. Subirana

Appointments

■ EMBO members

John Diffley
**Director of Clare Hall Laboratories, Cancer
Research UK's London Research Institute**
(effective as of January 2006)

A good read – publications from the EMBO community

■ research

**Prohibitin is required for Ras-induced
Raf–MEK–ERK activation and epithelial cell
migration**
*Krishnaraj Rajalingam, Christian Wunder,
Volker Brinkmann, Yuri Churin, Mirko Hekman,
Claudia Sievers, Ulf R. Rapp, Thomas Rudel*
Nature Cell Biology **7**: 837–843
(24 Jul 2005)

Looking back
Georges N. Cohen
Annual Review of Microbiology **59**: 1–17
(Oct 2005)

A lifetime with microbes
Georges N. Cohen
In: *Selected Topics in the History of
Biochemistry: Personal Recollections IX:
Comprehensive Biochemistry* **44**: 133–164
(Elsevier, ed. 2005)

■ books

**The Ten Most Wanted Solutions in
Protein Bioinformatics**
(Chapman & Hall/CRC
Mathematical Biology & Medicine 2005)

By *Anna Tramontano*

*The Ten Most Wanted Solutions in
Protein Bioinformatics* considers
the ten most significant problems
occupying those looking to identify
the biological properties and
functional roles of proteins.

Next EMBO_{encounters} issue

■ issue 5

The next EMBO_{encounters} issue — winter 2005/6 — will be dispatched in March 2006. You can send your contributions/news to: communications@embo.org at any time. The deadline for the winter issue is **January 9, 2006**.